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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/768,975

01/23/2001

Stephen P. Williams

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SEAGATE TECHNOLOGY LLC  
INTELLECTUAL PROPERTY DEPT. - COL2LGL  
389 DISC DRIVE  
LONGMONT, CO 80503

EXAMINER

BLOUIN, MARK S

ART UNIT

PAPER NUMBER

2627

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PAPER

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
09768975	1/23/01	WILLIAMS ET AL.	Q01-1000-US1

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La Jolla, CA 92037

**EXAMINER**

Mark Blouin

ART UNIT	PAPER
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**Commissioner for Patents**

A supplemental Examiner's Answer is submitted with specific grounds of rejection added under the heading

*Mark Blouin* 2/14/08  
Au 2627



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/768975

Filing Date: January 23, 2001

Appellant(s): Williams, et al

\_\_\_\_\_  
James P. Broder  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 22 September 2005 appealing from the Office Action  
mailed June 9, 2005.

***I. Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

***II. Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

***III. Status of Claims***

The statement of the status of the claims contained in the brief is correct.

Claims 6, 9-11, 13 and 22-75 are pending in the present application. Claims 1-5, 7-8, 12 and 14-21 have previously been cancelled without prejudice. Claims 6, 9-11, 13 and 22-75 are the subject of this appeal. Claims 6,9-11,13, and 22-74 are rejected under 35 U.S.C. 102(e) as being anticipated by Kahn et al (USPN 6,134,087). Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn et al (USPN 6,134,087) in view of Ohwe et al (USPN 6,594,116).

***IV. Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

***V. Summary of Claimed Subject Matter***

The summary of invention contained in the brief is correct.

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***VI. Grounds of Rejection to be Reviewed Upon Appeal***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

***VII. Claims Appendix***

The copy of the appealed claims contained in the appendix to the brief is correct.

***VIII. Evidence Relied Upon***

Kahn et al (USPN 6,134,087) and Ohwe et al (USPN 6,594,116)

***XI. Grounds of Rejection***

**Issue No. 1: Whether claims 6, 9-11, 13 and 22-74 are anticipated by Khan et al. under 35 U.S.C. § 102(e).**

**The grounds of rejection are shown below:**

**Claims 6,9-11,13,22,37,40,50, and 59**

Regarding Claims 6,9-11,13,22,37,40,50, and 59, the Examiner maintains that Kahn et al shows (Figs. 1-5) a head stack assembly for a disc drive including a storage disc, the head stack assembly comprising an actuator arm, a coarse positioner that moves the actuator arm relative to the storage disk, a transducer assembly including a load beam (10), a flexure (12) secured to the load beam, a data transducer (40) secured to the flexure (12), a separately formed base plate (18) securing the transducer assembly to the actuator arm, and a fine positioner (piezoelectric elements) secured directly to the base plate, the fine positioner moving a portion of the base plate relative to the actuator arm, wherein the base plate further comprises a positioner cavity (23) that receives the fine positioner, the proximal and distal ends are secured under compression, a flex section (224,226) positioned adjacent to the positioner cavity, the flex section allowing the base

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plate to flex, a pair of spaced apart positioner cavities (Fig.1) that receive the fine positioner, a pair of flex sections that allow the base plate to flex, wherein the positioner cavities are positioned between the flex sections, wherein the flex sections are positioned between the positioner cavities, wherein the fine positioner moves the transducer assembly substantially transversely relative to the actuator arm; further comprising a control system (Col 3, lines 22-35) that directs current to the coarse positioner to move the actuator arm so that the data transducer is positioned near or on the target track and directs current to the fine positioner to selectively move the base plate so that the data transducer is positioned and maintained on the target track during rotation of the storage disk, wherein the fine positioner is a piezoelectric motor (32,34).

**Claims 23-27,43,44,45, 53, 54, 57, and 60-64**

Regarding Claims 23-27,43,44,45, 53, 54, 57, and 60-64, the Examiner maintains that Kahn et al shows (Figs. 1-5) the base plate includes a pair of flex sections (26) that allow the base plate to flex, and wherein at least one or each of the piezoelectric motors is positioned substantially between the flex sections, and at least one of or each of the flex sections are positioned between the pair of piezoelectric motors (Fig. 3, (39)), wherein at least one of the piezoelectric motor(s) do not contact either of the flex sections.

**Claims 30,31,41, and 42**

Regarding Claims 30,31,41, and 42, Kahn et al shows (Figs. 1-5) the base plate includes a plate mount (14) that secures the base plate to the actuator arm, wherein one of the piezoelectric motors, positioned parallel to each other is secured to the base plate substantially between the plate mount and the data transducer.

**Claims 32,39,51,52,65,66, and 73**

Regarding Claims 32,39,51,52,65,66, and 73, Kahn et al shows (Figs. 1-5) at least one of the piezoelectric motors includes a proximal end and a distal end, and wherein only the proximal end and a distal end are the only portions of at least one of the piezoelectric motor that contact the base plate secured to the base plate under compression (**Abstract- the springs curl or flatten in response to contraction or expansion of the piezoelectric elements – this motion would inherently secure the piezoelectric motor under compression**).

**Claims 33,34,35,36,46-49,55,56,58, and 71**

Regarding Claims 33,34,35,36,46-49,55,56,58, and 71, Kahn et al shows (Figs. 1-5) the flex section (26) that cantilevers away from the plate side and is *substantially* "U" or "V" shape.

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**Claims 67-70,72, and 74**

Regarding Claims 67-70,72, and 74, are drawn to a method of retrieving data from a target track on a rotating storage disk of a disk drive using the aforementioned apparatus. The limitations of the method claims are met and are anticipated by Kahn et al when the apparatus operates.

**Issue No. 2: Whether claim 75 is unpatentable over Khan et al. under 35**

**U.S.C. § 103(a).**

**The grounds of rejection are shown below:**



**Claim 75**

Regarding Claim 75, Kahn et al shows all the features described, supra, but does not show a load beam where the base plate, which is at least approximately three times the thickness of the load beam.

The Examiner maintains that with regard to the base plate and that Ohwe shows (Col 3, lines 62-63) that a load beam can be of a thickness ranging between 0.02 to 0.08 mm, which when combined with Kahn et al, would make the base plate at least approximately three times the thickness of the load beam.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the base plate of Kahn et al with the load beam as taught by Ohwe et al. The rationale is as follows: One of ordinary skill in the art at the time the invention was made would have been motivated to combine the base plate of Kahn et al with the load beam as taught by Ohwe et al in order to improve positioning accuracy by the increased damping effect of the thicker base plate.

***X. Response to Arguments***

**1. Issue 1: Whether claims 6, 9-11, 13 and 22-74 are anticipated by Khan et al. under 35 U.S.C. § 102(e).**

**Claims 6,9-11,13,22,37,40,50, and 59**

Regarding Claims 6,9-11,13,22,37,40,50, and 59, the Examiner maintains that Kahn et al shows (Figs. 1-5) a head stack assembly for a disc drive including a storage disc, the head stack assembly comprising an actuator arm, a coarse positioner that moves the actuator arm relative to

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the storage disk, a transducer assembly including a load beam (10), a flexure (12) secured to the load beam, a data transducer (40) secured to the flexure (12), a separately formed base plate (18) securing the transducer assembly to the actuator arm, and a fine positioner (piezoelectric elements) secured directly to the base plate, the fine positioner moving a portion of the base plate relative to the actuator arm, wherein the base plate further comprises a positioner cavity (23) that receives the fine positioner, the proximal and distal ends are secured under compression, a flex section (224,226) positioned adjacent to the positioner cavity, the flex section allowing the base plate to flex, a pair of spaced apart positioner cavities (Fig.1) that receive the fine positioner, a pair of flex sections that allow the base plate to flex, wherein the positioner cavities are positioned between the flex sections, wherein the flex sections are positioned between the positioner cavities, wherein the fine positioner moves the transducer assembly substantially transversely relative to the actuator arm, further comprising a control system (Col 3, lines 22-35) that directs current to the coarse positioner to move the actuator arm so that the data transducer is positioned near or on the target track and directs current to the fine positioner to selectively move the base plate so that the data transducer is positioned and maintained on the target track during rotation of the storage disk, wherein the fine positioner is a piezoelectric motor (32,34).

**Claims 23-27,43,44,45, 53, 54, 57, and 60-64**

Regarding Claims 23-27,43,44,45, 53, 54, 57, and 60-64, the Examiner maintains that Kahn et al shows (Figs. 1-5) the base plate includes a pair of flex sections (26) that allow the base plate to flex, and wherein at least one or each of the piezoelectric motors is positioned substantially between the flex sections, and at least one of or each of the flex sections are

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positioned between the pair of piezoelectric motors (Fig. 3, (39)), wherein at least one of the piezoelectric motor(s) do not contact either of the flex sections.

**Claims 30,31,41, and 42**

Regarding Claims 30,31,41, and 42, Kahn et al shows (Figs. 1-5) the base plate includes a plate mount (14) that secures the base plate to the actuator arm, wherein one of the piezoelectric motors, positioned parallel to each other is secured to the base plate substantially between the plate mount and the data transducer.

**Claims 32,39,51,52,65,66, and 73**

Regarding Claims 32,39,51,52,65,66, and 73, Kahn et al shows (Figs. 1-5) at least one of the piezoelectric motors includes a proximal end and a distal end, and wherein only the proximal end and a distal end are the only portions of at least one of the piezoelectric motor that contact the base plate secured to the base plate under compression (**Abstract- the springs curl or flatten in response to contraction or expansion of the piezoelectric elements – this motion would inherently secure the piezoelectric motor under compression**).

**Claims 33,34,35,36,46-49,55,56,58, and 71**

Regarding Claims 33,34,35,36,46-49,55,56,58, and 71, Kahn et al shows (Figs. 1-5) the flex section (26) that cantilevers away from the plate side and is *substantially* "U" or "V" shape.

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**Claims 67-70,72, and 74**

Regarding Claims 67-70,72, and 74, are drawn to a method of retrieving data from a target track on a rotating storage disk of a disk drive using the aforementioned apparatus. The limitations of the method claims are met and are anticipated by Kahn et al when the apparatus operates.

Appellant's arguments filed September 22, 2005 have been fully considered but they are not persuasive.

Appellant asserts on Page 6 through 16:

*"Importantly, the mount plate boss 16 is not part of the load beam 10, but is part of the mount plate 14, which is a separate structure from the load beam 10... and ...Khan et al. does not teach or suggest a **separately formed base plate** that secures the load beam structure to the actuator arm, with the base plate including one or more flex sections. Further, Khan et al. does not teach or suggest securing a fine positioner (e.g. one or more piezoelectric crystals 32, 34) to such a separately formed base plate."*

The main and foremost issue being argued is the anticipation in Kahn et al of a **separately formed base plate securing a load beam to an actuator arm**. All other arguments hinge on the determination of whether this feature is anticipated by Kahn et al.

The Examiner maintains that the base plate (18) is clearly shown in Figure 1 and referred to in Column 5, line 14. The other issue is the interpretation of the phrase "separately formed". In accordance with the definitions found in Merriam/Webster's dictionary, the Examiner interprets separately formed as "a structure (**base plate**) given a particular shape (**form**) apart from (**separate**) other structures in the load beam.

The Examiner maintains that the mount plate boss (16) is part of the load beam even though it may be a separate structure. It is a distinct element of the load beam integral to its'

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function (e.g., a wheel is a separate element, nevertheless, it is still part of the car and integral to its' function). In addition, the base plate (18) is clearly separately formed from the other elements or portions (i.e., the flexure (12)) of the load beam and performs a distinct and separate function of attaching and supporting the load beam to the actuator arm (not shown) and providing positioner cavities (Figs. 1-3) for the piezoelectric elements (32,34).

Therefore, the original rejection of Claims 6, 9-11,13 and 22-74 is maintained.

**2. Issue No. 2: Whether claim 75 is unpatentable over Khan et al. under 35 U.S.C. § 103(a).**

**Claim 75**

Regarding Claim 75, Kahn et al shows all the features described, supra, but does not show a load beam where the base plate, which is at least approximately three times the thickness of the load beam.

Appellant asserts on Page 16 through 20:

*"...even if Ohwe shows that a load beam has a thickness ranging between 0.02 to 0.08 mm, Khan et al does not teach or suggest use of a base plate, nor does Khan et al indicate what the thickness of a base plate would or should be. Thus, the combination does not teach or suggest having a base plate that is at least approximately three times the thickness of the load beam."*

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The Examiner maintains the arguments provided, *supra*, with regard to the base plate and that Ohwe shows (Col 3, lines 62-63) that a load beam can be of a thickness ranging between 0.02 to 0.08 mm, which when combined with Kahn et al. would make the base plate at least approximately three times the thickness of the load beam.


It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the base plate of Kahn et al with the load beam as taught by Ohwe et al. The rationale is as follows: One of ordinary skill in the art at the time the invention was made would have been motivated to combine the base plate of Kahn et al with the load beam as taught by Ohwe et al in order to improve positioning accuracy by the increased damping effect of the thicker base plate.

***XI. Related Proceedings Appendix***

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully Submitted,

  
Mark S. Blouin  
Art Unit 2653

MSB

November 1, 2005

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